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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,065	06/25/2003	Masuhiro Natsuhara	039.0015	1064

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EXAMINER	
KACKAR, RAM N	
ART UNIT	**PAPER NUMBER**
1763	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/604,065	NATSUHARA ET AL.	
	Examiner	Art Unit	
	Ram N. Kackar	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/20/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawanabe et al (US 6133557).**

Kawanabe et al disclose a sintered aluminum nitride (Abstract) wafer holder having an electrical circuit inside it (Fig 3A-12) and electrodes to supply power to the circuit (13). The wafer holder is 200mm diameter and 10mm thick (Col 13 lines 53-55). The electrodes supplying power to the circuit appear to be at the corners. The 10% of thickness is 1mm. The spacing between the electrodes therefore would be several times the minimum required distance. Further the aluminum nitride could be up to 99.8% pure (Col 12 lines 34-45) and lack of impurities make it superior in corrosion resistance. Impurities of metal like Fe are preferred to be less than 2000 ppm. With slightly less purity it could have oxygen as an oxide sintering aid (Col 12 lines 46-54). The proportion of oxygen with oxide sintering aid of a range of 0.5- 20 wt% could be less than 2%.

The limitation of the temperature uniformity being within ±1 percent is an intended use limitation. However Kawanabe et al disclose uniformity of heating due to aluminum nitride, which has high thermal conductivity (Col 12 lines 43-45 and Col 18 lines 9-13).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawanabe et al (US 6133557) in view of Shamoulian et al (US 6572814).

Kawanabe et al disclose a sintered aluminum nitride (Abstract) wafer holder having an electrical circuit inside it (Fig 3A-12) and electrodes to supply power to the circuit (13). The wafer holder is 200mm diameter and 10mm thick (Col 13 lines 53-55). The electrodes supplying power to the circuit appear to be at the corners. The 10% of thickness is 1mm. The spacing between the electrodes therefore would be several times the minimum required distance. Further the aluminum nitride could be up to 99.8% pure (Col 12 lines 34-45) and lack of impurities make it superior in corrosion resistance. Impurities of metal like Fe are preferred to be less than 2000 ppm. With slightly less purity it could have oxygen as an oxide sintering aid (Col 12 lines 46-54). The proportion of oxygen with oxide sintering aid of a range of 0.5- 20 wt% could be less than 2% .

Kawanabe et al do not disclose the material of the electrode supplying power to the heater element.

Shamoulian et al disclose that the electrodes for supplying power to electrodes could be tungsten or molybdenum (Col 7 lines 14-18).

Therefore it would have been obvious for one of ordinary skill in the art to have power supply electrodes to be made of tungsten or molybdenum for their use at high temperatures.

5. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Niori et al (US 5280156) in view of Kawanabe et al (US 6133557).**

Niori et al disclose a wafer holder, which could be of aluminum nitride having an electrical circuit inside it (Fig 8) and electrodes to supply power to the heating circuit (8) and an electrode to supply power to the electrostatic chuck (7A). The electrodes supplying power to the heating circuit appear to be at the periphery (8) and to the chuck at the center. The 10% of thickness would typically be 1-2 mm. The spacing between the electrodes therefore (typically 75-100 mm) would be several times the minimum required distance. The material of the wire 8 is disclosed to be tungsten.

Niori et al do not disclose the purity of aluminum nitride wafer holder.

Kawanabe et al disclose a sintered aluminum nitride (Abstract) wafer holder having an electrical circuit inside it (Fig 3A-12) and electrodes to supply power to the circuit (13). Further the aluminum nitride could be up to 99.8% pure (Col 12 lines 34-45) and lack of impurities make it superior in corrosion resistance. Impurities of metal like Fe are preferred to be less than 2000 ppm. With slightly less purity it could have oxygen as an oxide sintering aid (Col 12 lines 46-54). The proportion of oxygen with oxide sintering aid of a range of 0.5- 20 wt% could be less than 2%.

Therefore it would have been obvious for one of ordinary skill in the art to have a highly pure sintered aluminum nitride wafer holder for its corrosion resistance and oxygen for sintering aid.

Response to Arguments

Applicant's arguments filed 1/31/2007 have been fully considered but they are not persuasive.

Applicant's arguments that the disclosed prior art does not disclose uniformity of ± percent is not persuasive since it is an intended use. Further since all the structural features are disclosed it will inherently behave the same way as claimed invention.

An invention need not operate differently than the prior art to be patentable, but need only be different. Or perhaps more accurately, be obviously different." *Hewlett-Packard Co. v. Bausch & Lomb Inc.* 15 USPQ 2d 1525 (Fed. Cir. 1990). Cites *Demaco Corp. v. F. Von Langedorff Licensing Ltd.* 7 USPQ 2d 1222 (Fed. Cir. 1988); *Panduit Corp. v. Dennison Mfg. Co.* 227 USPQ 337 (Fed. Cir. 1987).

Further, the manner in which an apparatus operates is not germane to the issue of patentability of the apparatus itself. *Ex parte Wikdahl* 10 USPQ 2d 1546, 1548 (BPAI 1989); *Ex parte McCullough* 7 USPQ 2d 1889,1891 (BPAI 1988); *In re Finster walder* 168 USPQ 530 (CCPA 1971); *In re Casey* 152 USPQ 235, 238 (CCPA 1967).

Still further, it has been held that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danley*,120 USPQ 528, 531, (CCPQ 1959); " Apparatus claims cover what a device is, not what a device does" (Emphasis in original) *Hewlett-Packard Co. V. Bausch & Lomb Inc.*, 15USPQ2d 1525,1 528 (Fed. Cir. 1990); and a claim containing a (recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Also see MPEP 2114.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ram Kackar
Primary Examiner AU 1763